REMARKS

Claims 1-7 are pending in this application. By this Amendment, claims 1 and 4 have been amended. No new matter has been added.

Entry of the amendments is proper under 37 CFR §1.116 since the amendments: (a) place the application in condition for allowance for the reasons discussed herein; (b) do not raise any new issue requiring further search and/or consideration as the amendments amplify issues previously discussed throughout prosecution; (c) satisfy a requirement of form asserted in the previous Office Action; and (d) place the application in better form for appeal, should an appeal be necessary.

In paragraph 1, on page 2 of the Office Action, it is respectfully submitted the Examiner has misinterpreted claim 1 and the discussion held during the April 12, 2005 interview. In particular, there is a two step process in controlling the power being applied to the motor. First, a judgment is made that the probe contacts the workpiece when the variation of the output from the scale becomes less than an equal level of power being applied to the motor, and then reducing the power being applied to the motor. The second step is controlling the power being applied to the motor based on a greater one of speed variations of the output from the scale and an output from the workpiece sensor when the output from the workpiece sensor varies (Figs. 4-5; paragraphs [0026] and [0027]). Accordingly, the output from the scale <u>itself</u> does not direct the power of the motor and the scale does not have a <u>constantly</u> varying output.

In paragraph 2, on page 3 of the Office Action, claims 1-7 were rejected under 35 U.S.C. §112, second paragraph. By this Amendment, claim 1 has been amended to clarify that the device makes a judgment that the probe contacts the workpiece when the variation of the output from the scale becomes less than an equal level of power being applied to the motor, and then reduces the power being applied to the motor; and subsequently controls the

power being applied to the motor based on a greater one of the speed variations of the output from the scale and an output from the workpiece sensor when the output from the workpiece sensor varies. Accordingly, amended claim 1 and claims 2-7, which depend from claim 1, overcome the §112 rejection. Therefore, withdrawal of the rejection is respectfully requested.

In paragraph 6, on page 4 of the Office Action, claims 1, 3-5, and 7 were rejected under 35 U.S.C. §102(b) as being anticipated by Takei, U.S. Patent No. 5,713,136. The rejection is respectfully traversed.

Applicants' invention of claim 1 calls for a probe driving mechanism for displacement measuring apparatuses for use in measuring the sizes of a workpiece without causing the workpiece to be deformed even when a probe is brought into contact therewith, comprising a motor for driving the probe, a scale for detecting the displacement of the probe, a workpiece sensor for detecting the engagement of the probe with the workpiece, and a device for controlling a power being applied to the motor based on an output from the scale when the output from the scale varies based on the power applied to the motor; making a judgment that the probe contacts the workpiece when the variation of the output from the scale becomes less than an equal level of power being applied to the motor, and then reducing the power being applied to the motor; and subsequently controlling the power being applied to the motor based on a greater one of speed variations of the output from the scale and an output from the workpiece sensor when the output from the workpiece sensor varies. Takei fails to disclose these features.

As admitted by the Examiner, in paragraph 2, on page 2 of the Office Action, Takei does not show controlling the power being applied to the motor based on the variation of output from the scale. Takei also does not describe a device for controlling the power applied to the motor which corresponds to Applicants' device for controlling the power applied to the motor.

In Takei, the speed of a linear motor is reduced according to the command from a proximity sensor, and the linear motor is <u>stopped</u> by the processing unit as a result of judging that the probe has reached a prescribed measuring load after making contact with the object (col. 2, lines 51-56). Takei is using a <u>prescribed current value</u> to decelerate the speed of the linear motor just before contact with the object being measured. Once the prescribed current value has been reached, the processing circuit 110 holds the linear motor, and after holding the linear motor, the article is then measured (col. 12, lines 6-15). But, the proximity sensor does not measure the article. Instead, the article is measured in accordance with the circuit shown in Fig. 8 (col. 12, lines 13-15). In other words, Takei controls the motor using a prescribed current value and then the article is measured.

Further, Takei controls the motor using only a <u>single</u> sensor, i.e., the proximity sensor, which is used to determine a prescribed current value that decreases the speed of the linear motor. Once the probe has made contact with the object, then the other sensors, i.e., detection sensors, are used to measure the article. Nowhere does Takei disclose a device for controlling a power being applied to the motor based on an output from the scale when the output from the scale varies based on the power applied to the motor; making a judgment that the probe contacts the workpiece when the variation of the output from the scale becomes less than an equal level of power being applied to the motor, and then reducing the power being applied to the motor; and subsequently controlling the power being applied to the motor based on a greater one of speed variations of the output from the scale and an output from the workpiece sensor when the output from the workpiece sensor varies, as recited in claim 1.

Applicants' probe driving mechanism, on the other hand, uses two separate steps in controlling the power being applied to the motor. As discussed above, the first step involves using the variations of the output from the scale to determine that the probe made contact with object and then reducing the power being applied to the motor. The second step

involves using <u>two</u> sensors, i.e., the scale and workpiece sensor, and comparing speed variations of the two sensors and using the sensor having the greater speed variation to control the power being applied to the motor. Takei fails to disclose this feature.

Also, Takei does not disclose a scale for detecting the displacement of the probe ("proximity sensor", Column 3, lines 6-12). What Takei does describe is that, as shown in Fig. 14, a proximity of probe portion 82 to the measured object is detected by a command from a proximity sensor (not shown) attached to the probe section 82 shown in Fig. 7 (col. 11, lines 64-67). However, the proximity sensor is not shown in Fig. 7 or in any of the other figures and Takei is silent as to whether the proximity sensor is a scale for detecting the displacement of the probe. Accordingly, Takei does not disclose that the proximity sensor is <u>a scale</u> for detecting the displacement of the probe.

Further, Takei's processing unit is not a workpiece sensor for detecting the engagement of the probe with the workpiece. Instead, Takei's processing unit judges that the probes have reached a prescribed measuring load after the probes have made contact with the object (col. 3, lines 8-11). As Takei describes, processing unit 110 <u>calculates</u> the outer dimensions of measured object 100 based on the electrical signal output by the relative position detection units 71, 72, which are magnetic sensors (col. 9, lines 28-33). The processing unit is basically composed of counter control circuits 110a, 110b, and processing circuit 110c (Fig. 8). Thus, processing unit 110 is not a workpiece sensor, but instead processes the electrical signals from the detection units in order to calculate the outer dimensions of the measured object.

Accordingly, Takei does not literally disclose each and every feature of Applicants' claimed invention as recited in claim 1 and the rejection under 35 U.S.C. §102 is inappropriate. Further, for the reasons discussed, Takei does not suggest the features as recited in claim 1.

Because Takei does not anticipate or suggest the features of claim 1, Takei cannot possibly anticipate or suggest the subject matter of claims 3-5, and 7, which depend from claim 1, for the reasons discussed with respect to claim 1 and for the additional features recited therein. It is respectfully requested that the rejection be withdrawn.

In paragraph 13, on page 5 of the Office Action, claims 2 and 6 were rejected under 35 U.S.C. §103(a) over Takei, as applied to claim 1, and in view of Japanese Patent JP 02-221801A (Mitsutoyo Corporation). The rejection is respectfully traversed.

Mitsutoyo fails to overcome the deficiencies of Takei as applied to claim 1.

Accordingly, neither of the applied references disclose or suggest all of the features recited in claim 1, so the references cannot possibly suggest claims 2 and 6 for that reason and for the additional features cited. It is respectfully requested that the rejection be withdrawn.

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-7 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,

Kurt P. Goudy

James A. Oliff
Registration No. 27,075

Kurt P. Goudy
Registration No. 52,954

JAO:KPG/tea

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OLIFF & BERRIDGE, PLC
P.O. Box 19928
Alexandria, Virginia 22320
Telephone: (703) 836-6400

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